

Recommendations for Preventive Maintenance of Metal Forming and Fabricating Machines

Failure to perform proper maintenance may cause your machine to unexpectedly stop and hinder your production.

Periodic maintenance will ensure safe performance of machines for extended periods of time and minimize any occurrence of failure.

Sudden and Unpredictable Accidents

Abnormal Phenomena

Stop Position Slippage

Sudden Failure

Let's enjoy high returns from the maximum performance and stable operation of your machine.

Principles of Preventive Maintenance

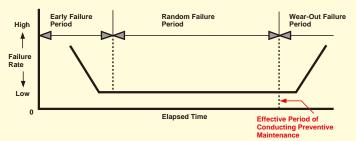
Electrical Parts

Be sure to replace electrical parts such as relays, switches, motors, electromagnetic valves and emergency stop buttons with only those parts designated by the manufacturer.

Mechanical Parts Be sure to replace mechanical parts such as clutch brakes, couplings for encoders, O-rings, V-belts and lubricating oils with only those parts designated by the manufacturer.

Are you familiar with "The Bathtub Curve" as a rule-of-thumb to estimate the service life of your machine?

- Perform the statutory "Pre-Operation Inspection" to detect any abnormalities and take early countermeasures as required.
- Every part has a service life. Be sure to perform daily inspections and maintenance in order to lengthen the effective preventive maintenance period.
- It is important to replace parts before the expiration of their "Recommended Replacement Interval" which is provided by the manufacturer as a rough estimate of the service life of their parts.



Ensuring preventive maintenance is a cornerstone of stable business management.

It is essential to perform sufficient inspections and maintenance and to monitor the performance of machines so that the machines may perform at their maximum capacity and maintain high utilization rates.

Daily Inspection and Maintenance

Perform daily inspection and maintenance before beginning operating and when changing dies/molds (or during shift changes in 24-hour operations).

Biannual Inspection and Maintenance

Inspect and maintain in accordance with the biannual procedure.

Weekly Inspection and Maintenance

Inspect and maintain in accordance with the weekly procedure.

Annual Inspection and Maintenance

Inspect and maintain in accordance with the annual procedure.

Monthly Inspection and Maintenance

Inspect and maintain in accordance with the monthly procedure.

3~5-Year Overhaul and Maintenance

Overhaul and maintain in accordance with the 3~5-year overhaul and maintenance.

Maintenance Action Plan

Maintenance Implementation Confirm the Effectiveness of the Maintenance

Feed Back to the Maintenance Plan

Plan

- (1) Produce an action plan
 - Prepare a maintenance action plan timetable.
 - Acquire consumables and maintenance parts in advance.
- (2) Make a checklist of inspection items and criteria for judgment in order to avoid any omissions
- (1) Perform inspections in accordance with the checklist.

Do

- (2) Maintain records of the status before parts replacement and the condition of the replacement parts.
- (3) Replace those parts that have come to their life and maintain in accordance with the plan.
- (1) Confirm any before-and-after improvement.
- (2) Review failure and downtime frequency records as part of your improvement activities.
- (1) Review "Plan, Do, and Check" results, and clarify points for improvement.
- (2) Feed back to the maintenance plan of any improvement measures resulting from maintenance details.

Prepared and issued by

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